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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,032	11/19/2003	Christopher M. Osgood	911-10.3	7149

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EXAMINER

KERSHTEYN, IGOR

ART UNIT PAPER NUMBER

3745

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/718,032

Applicant(s)

OSGOOD, CHRISTOPHER M.

Examiner

Igor Kershteyn

Art Unit

3745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-14 and 16-20 is/are rejected.
- 7) ☒ Claim(s) 8 and 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 03/05/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite because in lines 2-3 it recites "the shaft is made substantially out of only engineering plastic" where terms "substantially" and "only" are contradicting each other.

Claim 17 is indefinite because in lines 2-3 it recites "the shaft is made substantially out of only engineering plastic" where terms "substantially" and "only" are contradicting each other.

Claim 13 is indefinite because in line 2 it recites "other structure" which is unclear what structure is claimed.

Claims 2-12, 14-16, and 18-20 are indefinite by virtue of their dependency on claim 1.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 3745

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 10-14, and 16-18, as far as they are definite, are rejected under 35 U.S.C. 102(b) as being anticipated by Romanyszyn (5,108,273).

In figure 1, Romanyszyn teaches a shaft 14 for a rotating machine 10, characterized in that: the shaft 14 is made substantially out of only engineering plastic and includes a portion 64 having one or more surfaces 66 serving as respective bearing surfaces and formed from the same engineering plastic as the rest of the shaft 14, the shaft 14 thereby integrating the functions of both a shaft structure and one or more bearing structures.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Romanyszyn (5,108,273) in view of Ono et al. (5,769,618).

Romanyszyn teaches all the claimed subject matter except that he doesn't teach the selected polymer is poly-ether-ether-ketone (PEEK).

Ono et al. in figure 7, teaches a shaft 9 for rotating machine made of a selected polymer which is poly-ether-ether-ketone (PEEK).

Since Romanyszyn and Ono et al. are analogous art because they are from the same field of endeavor, that is the shaft for rotating machine art, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to use the poly-ether-ether-ketone (PEEK) to make the shaft of Romanyszyn as taught by Ono et al. for the purpose of providing a shaft for rotating machine having properties of high elastic deformation, fatigue, chemical and heat resistance.

Claims 4, 6, 7 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Romanyszyn (5,108,273) in view of Knabel et al. (6,401,444).

Romanyszyn teaches all the claimed subject matter except that he doesn't teach the selected polymer is polyimide, and wherein graphite or PTFE is substantially uniformly distributed throughout the engineering plastic material.

Knabel et al. in figures 1-5, teaches an engineering plastic material used for shaft bearing surface 6 which comprises polyimide and wherein graphite or PTFE is substantially uniformly distributed throughout the engineering plastic material.

Since Romanyszyn and Knabel et al. are analogous art because they are from the same field of endeavor, that is the shaft bearing surfaces art, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the shaft bearing surface of Romanyszyn with the engineering plastic material and wherein graphite or PTFE is substantially uniformly distributed throughout the

Art Unit: 3745

engineering plastic material as taught by Knabel et al. for the purpose of reducing friction in the shaft bearing surface.

***Allowable Subject Matter***

Claims 8 and 15 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Prior Art***

Prior art made of record but not relied upon is considered pertinent to Applicant's disclosure and consist of three patents.

Danner (3,274,799) is cited to show a plastic shaft for a rotating machine but fails to teach the shaft having bearing surfaces.

Laessig (3,647,314) is cited to show a centrifugal pump having a plastic shaft and a bearing surface but fails to teach the bearing surface being a part of the shaft.

Borger (5,026,253) is cited to show a plastic shaft for a rotating machine but fails to teach the shaft having bearing surfaces.

***Contact information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Kershteyn whose telephone number is

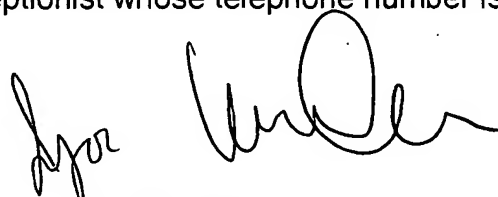
Art Unit: 3745

**(571)272-4817**. The examiner can be reached on Monday-Friday from 8:00 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look, can be reached on **(571)272-4820**. The fax number is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308 0861.

IK  
May 31, 2005

A handwritten signature in black ink, appearing to read 'Igor Kershteyn', is written over a horizontal line.

**Igor Kershteyn**  
**Patent examiner.**  
**Art Unit 3745**